

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 9, line 11, as follows:

In addition, the crystal oriented ceramics production method according to the present invention is provided with a mixing step in which a first anisotropic shaped powder, for which the growth plane has lattice coherency with a specific crystal plane of the isotropic perovskite compound described in ~~claim 1~~above, is mixed with a first reaction raw material that reacts with said first anisotropic shaped powder and at least forms the isotropic perovskite compound; a molding step in which the mixture obtained in the mixing step is molded so that the first anisotropic shaped powder is oriented; and, a heat treatment step in which the molded product obtained in the molding step is heated to cause a reaction between the first anisotropic shaped powder and the first reaction raw material.

Please amend the paragraph beginning at page 9, line 26 through page 10, line 2, as follows:

When a first anisotropic shaped powder that satisfies the predetermined conditions is reacted with a first reaction raw material that has a predetermined composition, anisotropic shaped crystals form composed of the isotropic perovskite compound described in ~~claim 1~~above that have inherited the orientation azimuth of the first anisotropic shaped powder. Consequently, if the first anisotropic shaped powder is oriented in the molded product and the molded product is heated to a predetermined temperature, a crystal oriented ceramic is obtained that is composed of the isotropic perovskite compound described in ~~claim 1~~above, and in which crystal grains having a specific crystal plane for the growth plane are oriented in a specific direction.

Please amend the paragraph beginning at page 10, line 4 through page 11, line 14, as follows:

Fig. 1 is an x-ray diffraction pattern of crystal oriented ceramics obtained in Example 1.

Fig. 2 is an x-ray diffraction pattern of crystal oriented ceramics obtained in Example 3.

Figs. 3(a) and 3(b) are x-ray diffraction patterns of crystal oriented ceramics obtained in Example 8 and a non-oriented sintered compact obtained in Comparative Example 3, respectively.

Fig. 4 is a graph showing the temperature dependency of the piezoelectric d_{31} constant of crystal oriented ceramics obtained in Example 2 and a non-oriented sintered compact obtained in Comparative Example 1.

Fig. 5 is a graph showing the temperature dependency of the piezoelectric d_{31} constant of crystal oriented ceramics obtained in Example 7 and a non-oriented sintered compact obtained in Comparative Example 3.

Fig. 6 is a graph showing the temperature dependency of the piezoelectric d_{31} constant of crystal oriented ceramics obtained in Example 9 and a non-oriented sintered compact obtained in Comparative Example 6.

Fig. 7 is a graph showing the temperature dependency of the piezoelectric d_{31} constant at room temperature.

Figs. 8 and 9 respectively indicate $D_{33\text{large}}$ and $E_{33\text{large}}$ in the case of driving by applying an electric field strength of 0-2000 V/mm in the form of a chopping wave having a frequency of 1 Hz over a temperature range of -42 to 165°C to the crystal oriented ceramics obtained in Example 9 and Comparative Example 6 and to the non-oriented sintered compact obtained in Comparative Example 6.

Figs. 10 and 11 show the temperature characteristics of $D_{33\text{large}}/(E_{33\text{large}})^{1/2}$ and $D_{33\text{large}}/(E_{33\text{large}})$ in the case of driving the crystal oriented ceramics obtained in Example 9 and Comparative Example 6.

Fig. 12 shows $D_{33\text{large}}$ in the case of producing an actuator with the crystal oriented ceramics obtained in Example 22.

Fig. 13 shows $D_{33\text{large}}$ in the case of driving the crystal oriented ceramics obtained in Example 33.

Fig. 14 shows the results of calculating the temperature characteristics of displacement in the case of constant voltage driving (characteristic index: $D_{33\text{large}}$), constant energy driving (characteristic index: $D_{33\text{large}}/(E_{33\text{large}})^{1/2}$) and constant charge driving (characteristic index: $D_{33\text{large}}/E_{33\text{large}}$) using displacement at room temperature as a reference value (100%).

Figs. 15 and 16 respectively show the generated displacement and generated electric field in the case of driving crystal oriented ceramics obtained in Example 23.

Figs. 17 and 18 respectively show the generated displacement and generated electric field in the case of driving the crystal oriented ceramics obtained in Example 23.

Please amend the paragraph beginning at page 15, line 28 through page 16, line 4, as follows:

In general, the larger the ratio of oriented crystal grains the higher the characteristics. For example, in the case a specific crystal plane is planar oriented, in order to obtain high piezoelectric characteristics, the average degree of orientation $F(\text{HKL})$ as determined according to the Lotgering method represented by the aforementioned Equation 1 is preferably 30% or more, and more preferably 50% or more. In addition, an oriented specific crystal plane is preferably a plane that is perpendicular to the polarization axis. For example, in the case the

crystal system of the perovskite compound is a tetragonal system, the specific crystal plane to be oriented is preferably the {100} plane. The crystal system may be a tetragonal system over an arbitrary temperature range of 100°C or more equal to or lower than the Curie temperature.

Please amend the paragraph beginning at page 16, line 20, as follows:

Since the crystal oriented ceramics as claimed in the present invention is composed of a polycrystalline substance having the first KNN compound as its primary phase, it exhibits high piezoelectric characteristics even among lead-free-based piezoelectric ceramics. In addition, since the specific crystal plane of each crystal grain that composes the polycrystalline substance is oriented in a single direction, the crystal oriented ceramics as claimed in the present invention exhibits high piezoelectric characteristics as compared with a non-oriented sintered compact having the same composition. The crystal oriented ceramics of this invention may provide a piezoelectric element of piezoelectric material composed of crystal oriented ceramics. A dielectric element may also be provided by dielectric material composed of such crystal oriented ceramics.